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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,913	10/30/2003	David W. Smithey	7647-000025	8253
27572	7590	05/24/2005		
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303				
			EXAMINER WALBERG, TERESA J	
			ART UNIT 3753	PAPER NUMBER

DATE MAILED: 05/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/696,913	Applicant(s) SMITHEY ET AL.	
	Examiner Teresa J. Walberg	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/26/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 8-17, 19-21, and 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (5,183,105) in view of Reagen et al (6,370,775). Adams discloses a heat exchanger (see Figs 3 and 4) including sheets of heat conducting material configured for use as fins (38), a plurality of openings in each sheet in the form of dog-bone shaped slots (40), canted with respect to horizontal and vertical (Fig. 4), the openings having a plurality of rows and columns and being used to support interconnected tubing segments of a heat exchanger (Fig. 4). While Adams does not disclose cutting the fins to size, Reagen et al teach forming heat exchanger fins in a large sheet and cutting it to desired sizes. See col. 3, lines 31-40. Note that Fig. 4 shows texturing of the surface that functions as indicia to show the cutting line. It would have been obvious in view of Reagen et al to cut the fins of Adams to size, the motivation being to enable easier manufacture of the fins.

3. Claims 5 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (5,183,105) in view of Reagen et al (6,370,775) as applied to claims 1-4, 8-17, 19-21, and 23-29 above and further in view of Murray (5,853,259). Adams in view of Reagen et al discloses a heat exchanger as claimed, but do not teach the use of

perforations as the indicia to show the cutting line. Murray teaches the use of perforations or printed indicia for a cutting line. It would have been obvious in view of Murray to use perforations to indicate the cutting line for the fins of Adams in view of Reagen et al, the motivation being to make the intended line easier to detect.

4. Claims 6, 7, 18, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adams (5,183,105) in view of Reagen et al (6,370,775) as applied to claims 1-4, 8-17, 19-21, and 23-29 above and further in view of Smitte (4,480,623). Adams in view of Reagen et al discloses a heat exchanger as claimed, with the exception of the openings in one column overlapping a portion of the openings in an adjacent column. Smitte teaches the use of openings in one column that overlap a portion of the openings in an adjacent column. It would have been obvious in view of Smitte to use openings in one column that overlap a portion of the openings in an adjacent column in the fins of Adams in view of Reagen et al, the motivation being to increase the turbulence of the air flow as taught by Smitte to thus increase heat transfer.

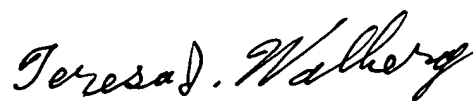
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baird, Hoek, Carr, Utter, Kamakura (JP 5-87480), and Uehara et al (JP 58-10142) are cited to show heat exchanger structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 9:00 - 5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Teresa J. Walberg
Primary Examiner
Art Unit 3753

tjw